

## New Strategy Being Developed to Deal With Emerald Ash Borer

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EAST LANSING, Mich. – “Everyone agrees that we need to do something besides stand back and watch the ash trees die.” So goes the reasoning behind the project to SLAM (SLow A.sh M.ortality) in the upper Peninsula, according to Deborah McCullough, professor of forest entomology at Michigan State University (MSU). Emerald ash borer (EAB), an exotic pest from Asia, was discovered in southeastern Michigan in 2002. Since then, this invader has killed an estimated 40 million ash trees in Lower Michigan. Populations of EAB have now been found in at least 12 other states and two Canadian provinces, costing public and private landowners millions of dollars.

“We’ve learned a lot since EAB was discovered in 2002,” said McCullough. “We are taking what we’ve learned and trying to integrate it into a practical, workable program to slow the growth and spread of EAB populations in relatively new and isolated outlier sites. If we can slow the rate at which EAB populations build and spread, we should be able to slow the rate at which ash trees die. That buys time -- time for research to advance and time for residents and property owners to figure out how they want to respond.”

Currently, when EAB is found in a new state or county, federal or state quarantines are put into place to prevent potentially infested ash trees, logs or firewood from being moved into areas that are not yet infested. Other than quarantines, however, little or nothing is done to slow the growth and spread of the EAB population in the outlier site. “But we know what happens if a site becomes infested and nothing is done,” said Andrew Storer, professor of forest insect ecology at Michigan Technological University (MTU). “The EAB population builds, the trees start to die and they die at an accelerated rate over time.”

Steve Katovich, a United States Department of Agriculture (USDA) Forest Service entomologist from St. Paul, Minn., noted that the number of larvae feeding under the bark determine how fast an ash tree dies. “If only a couple of larvae feed in a tree, they have little effect,” he said. “But as EAB populations build, there may be a couple of hundred larvae feeding in the tree. They destroy the tree’s ability to transport water and nutrients, which causes the tree to die.”

The SLAM project is a collaborative effort involving the USDA Forest Service, USDA Animal and Plant Health Inspection Service (APHIS), the Michigan Department of Agriculture (MDA), the Michigan Department of Natural Resources (MDNR), and scientists from MSU and MTU. “It’s not common to have people from this many agencies collaborate on a project,” said John Bedford, MDA pest response program manager. “We all share a goal of developing an integrated management plan for EAB outlier sites that can eventually be used in other states.”

Several management tactics can be used to slow EAB spread and ash mortality in an outlier site. Data from the project will be evaluated yearly and adjustments will be made as needed.

“So far, we are testing SLAM in the Moran and St. Ignace area where we have a small city and lots of rural and forested property,” Bedford said. “We can use girdled ash trees here, whereas in a highly developed urban area, we might rely more on other tools like insecticides.”

Ash trees can be girdled in spring by removing a band of outer and inner bark around the trunk. As the girdled trees become stressed over the summer, they attract adult EAB beetles when they are laying eggs. The girdled trees are cut down in fall and debarked so the number of larvae in the tree can be determined. These larvae will not complete their development, so fewer adult beetles will be in the area next year.

Insecticides can also be used to control EAB and slow ash mortality. Research showed that a new insecticide, sold as TREE-äge, controlled EAB for two years after it was applied. The insecticide is injected directly into the trunk at the base of the tree, which then transports the product up the trunk and into the canopy.

Woodpeckers are currently the most important natural enemy of EAB in North America. They feed on EAB larvae over the winter and researchers are looking at potential ways to attract more woodpeckers to areas with relatively new EAB populations. Other researchers are studying tiny wasps that kill EAB eggs and larvae. Biocontrol agents, such as the wasps, could eventually become an important tool for SLAM projects.

Since the project began in 2008, the MDNR and MDA have cooperated with the Hiawatha National Forest to map the abundance of ash trees in the Moran and St. Ignace area, while MSU, MTU and USDA Forest Service scientists continue their research to implement and evaluate the SLAM effort.

“Our SLAM project is the first time anyone has tried this approach to EAB,” McCullough said. “We are putting our heads together to come up with a means to manage this destructive insect.”

For more information on EAB, go to [www.emeraldashborer.info](http://www.emeraldashborer.info), or [www.michigan.gov/eab](http://www.michigan.gov/eab).  
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